## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization

International Bureau



# 

(43) International Publication Date 15 January 2004 (15.01.2004)

PCT

### (10) International Publication Number WO~2004/006225 A1

(51) International Patent Classification<sup>7</sup>:

(21) International Application Number:

PCT/IB2003/002746

G10L 19/02

(22) International Filing Date:

18 June 2003 (18.06.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

02077727.2

8 July 2002 (08.07.2002) EP

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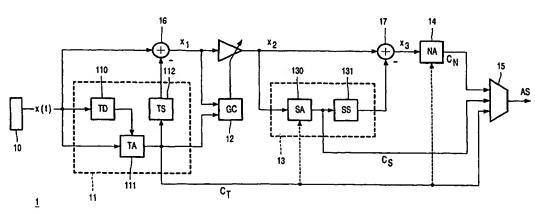
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- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SINUSOIDAL AUDIO CODING



2004/006225 A1 |||||||||| (57) Abstract: Coding (1) an audio signal (x) comprises providing a respective set of sampled signal values for each of a plurality of sequential segments. The sampled signal values are analysed (130) to generate one or more sinusoidal components for each of the plurality of sequential segments. The sinusoidal components are linked across a plurality of sequential segments. Sinusoidal codes (CS) comprise tracks of linked sinusoidal components for each of the plurality of sequential segments. Each track comprises a frequency and amplitude for a sinusoidal component in a starting segment of a track whereas selected tracks include an indicator that no phase is included for said starting segment.



A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G10L19/02

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC  $\,7\,$  G10L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, COMPENDEX, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.			
X	WO 00 79519 A (KONINKL PHILIPS ELECTRONICS NV) 28 December 2000 (2000-12-28) cited in the application page 2, line 6 - line 20 page 4, line 16 - line 30	1,2,5-15			
X	LEVINE S N ET AL: "A SWITCHED PARAMETRIC & TRANSFORM AUDIO CODER"  1999 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING. PHOENIX, AZ, MARCH 15 - 19, 1999, IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING (ICASSP), NEW YORK, NY: IEEE, US, vol. 2, 15 March 1999 (1999-03-15), pages 985-988, XP000900288 ISBN: 0-7803-5042-1 page 986, column 2, paragraph 3.1	1			

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Date of the actual completion of the international search	Date of malling of the International search report
14 October 2003	27/10/2003
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentiaan 2	Authorized officer
NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Köster, S

	tion) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category *	Citation of document, with Indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MCAULAY R J, QUATIERI T F: "Chapter 4: Sinusoidal Coding" IN: SPEECH CODING AND SYNTHESIS; KLEIJN W B, PALIWAL K, EDS.; ELSEVIER, 1995, XP008023157 page 168, paragraph 6.5	

# INTERNATION BEARCH REPORT

PCT/IB 03/02746

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 0079519 A	28-12-2000	CN DE WO EP JP	1320257 T 60001904 D1 0079519 A1 1105869 A1 2003502703 T	31-10-2001 08-05-2003 28-12-2000 13-06-2001 21-01-2003